

Appl. No. 10/708,347  
Amdt. dated August 17, 2006  
Reply to Office action of June 05, 2006

**Amendments to the Claims:**

Claim 1 (currently amended): A networking apparatus for providing fault tolerance to memory comprising:

- 5        a first memory including a plurality of entries to store data concerning a packet with an-address information, wherein the data concerning the packet is stored in one of the entries according to the address information, and the first memory is a MAC address memory; and
- 10      a second memory to store a status of at least one of the entries, wherein the status indicates that whether or not the corresponding entry is defective.

Claim 2 (original): The networking apparatus in claim 1, wherein the data concerning the packet includes a host/port relationship.

15      Claim 3 (original): The networking apparatus in claim 1, wherein the address information includes a MAC ID of the packet.

Claim 4 (original): The networking apparatus in claim 3, wherein the address information includes a source ID (SID) of the packet.

20      Claim 5 (currently amended): The networking apparatus in claim 3, wherein the address information includes a destination ID (SID) (DID) of the packet.

Claim 6 (original): The networking apparatus in claim 3, wherein the relationship 25      between the address information of the packet and the corresponding entry of the first memory is determined by a hashing scheme.

Claim 7 (cancelled)

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Claim 8 (original): The networking apparatus in claim 1, wherein the second memory is at least a register.

5 Claim 9 (original): The networking apparatus in claim 1, wherein the networking apparatus further includes a third memory to store the data concerning the packet if the entry corresponding to the packet is defective.

10 Claim 10 (currently amended): The networking apparatus in claim 9 ~~claim 10~~, wherein the third memory is a content-addressable memory (CAM).

Claim 11 (currently amended): A The networking apparatus in claim 1 wherein the networking apparatus is a switch.

15 Claim 12 (currently amended): A The networking apparatus in claim 1 wherein the networking apparatus is a router.

Claim 13 (currently amended): A method for providing fault tolerance to memory in a networking apparatus comprising:

20 performing a built-in self test (BIST) on a first memory including a plurality of entries;

marking a second memory to indicate a status of at least one of the entries, wherein the status is for indicating whether the corresponding entry is defective;

finding an entry of the first memory according to an address information of a packet;

25 and

checking the second memory to determine whether the entry corresponding to the address information of the packet is defective or not; and

storing data concerning the packet in a third memory if the first memory is

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defective.

Claim 14 (original): The method in claim 13 further comprising:  
broadcasting the packet if the entry corresponding to the address information of the  
5 packet is defective.

Claim 15 (currently amended): The method networking apparatus in claim 13, wherein  
the address information includes a MAC ID of the packet.

10 Claim 16 (currently amended): The method networking apparatus in claim 15, wherein  
the address information includes a source ID (SID) of the packet.

Claim 17 (currently amended): The method networking apparatus in claim 15, wherein  
the address information includes a destination ID (SID) (DID) of the packet.

15 Claim 18 (currently amended): The method networking apparatus in claim 13, wherein  
the relationship between the address information of the packet and the corresponding  
entry of the first memory is determined by a hashing scheme.

20 Claim 19 (original): The method in claim 13 further comprising:  
comparing the address information of the packet with a content of the corresponding  
entry of the first memory if the corresponding entry of the first memory is  
not defective;  
forwarding the packet to a specific port according to the content of the  
25 corresponding entry of the first memory if the comparison yields a match;  
and  
broadcasting the packet if the comparison does not yield a match.

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Claim 20 (original): The method in claim 19 further comprising:  
storing data concerning the packet into the corresponding entry of the first memory if the comparison does not yield a match.

5 Claim 21 (cancelled)

Claim 22 (currently amended): The method in claim 13 ~~claim 24~~ further comprising:  
comparing the data of the packet with a content of the corresponding entry of the first memory if the corresponding entry of the first memory is not defective;  
10 comparing the data of the packet with a content of the third memory if the corresponding entry of the first memory is defective; and  
forwarding the packet to a specific port according to at least one of the content of the corresponding entry of the first memory and the third memory if the comparison yields a match; and  
15 ~~broadcasting the packet if the comparison does not yield a match.~~

Claim 23 (currently amended): The method in claim 22 ~~claim 24~~ further comprising:  
storing the data of the packet into the third memory if the comparison does not yield a match.

20 Claim 24 (new): A networking apparatus for providing fault tolerance to memory comprising:  
a first memory including a plurality of entries to store data concerning a packet with address information, wherein the data concerning the packet is stored in one of the entries according to the address information;  
25 a second memory to store a status of at least one of the entries, wherein the status indicates whether or not the corresponding entry is defective; and  
a third memory to store the data concerning the packet if the entry corresponding to

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the packet is defective.